

ABSTRACT

A technology is disclosed for holding the test subject
contact surface temperature below a predetermined value
5 without providing a temperature sensor or setting ultrasonic
wave output excessively low and, according to this technology,
reflex time t_1 , which passes through oil 6, is reflected by
the inner surface of window 5, and is returned via oil, and
reflex time t_2 , which passes through the window, is reflected
10 by the outer surface of the window, and returned via window
or oil, are detected,

$$\text{sound velocity of window} = (\text{thickness of window} \times 2) \\ / (t_2 - t_1)$$

is measured, and the surface temperature of the window is
15 detected from this measured sound velocity.